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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,151	10/06/2003	Naomasa Shiraishi	032136.09	3620

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EXAMINER

MATHEWS, ALAN A

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,151

Applicant(s)

SHIRAISHI, NAOMASA

Examiner

Alan A. Mathews

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30, 42-63, 69-84 and 87-92 is/are pending in the application.
- 4a) Of the above claim(s) 30 and 75-84 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 42 - 63, 69 - 74, 87-92 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/423,457.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the Species I in the reply filed on February 13, 2006, is acknowledged. The traversal is on the ground(s) that the pending claims have been examined. This is not found persuasive because further search and consideration would be needed for the non-elected claims. Claims 30 and 75-84 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on February 13, 2006.

The requirement is still deemed proper and is therefore made FINAL.

Withdrawal of Indicated Allowability of Claims

2. The indicated allowability of claims 58, 59, 62, 63, and 88 are withdrawn in view of newly cited art. The Examiner regrets any inconvenience to the Applicant.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any

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errors of which applicant may become aware in the specification. One error is noted on page 122, lines 21-23, which states “the spatial filter 16 may be replaced with the spatial filter 10 shown in Fig. 10---“. There is no spatial filter “10”. In fact, numeral “10” has been used to designate a mirror. It also appears that other related applications have had a considerable number of changes to the specification.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 42-63, 69-74, and 87-92 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There appears to be no basis in the original disclosure for the method for imaging a fine pattern having linear features extending in orthogonal first and second directions and a method for providing a light source having decreased intensity portions at a center thereof and on first and second axes defined to intersect with each other at the center and defined along the first and second directions respectively as recited in claim 42. The Examiner does not find where the original disclosure describes forming an image with linear features extending in orthogonal first and second directions. The original disclosure discusses on page 54, lines 15-21,

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and page 57, lines 18-58, forming points P_{ϵ} , P_{η} , P_{χ} , and P_{μ} , and states these points are intersections of the line segment L_{α} , L_{β} , and L_{γ} or L_{η} . **But points on a line segment do not make linear features. Nor do points on intersecting lines make orthogonal linear features.** Nor does the original disclosure specifically state that the light source has a decreased intensity portions at a center thereof and on first and second axes defined to intersect with each other at the center and defined along the first and second directions.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 42-63, 69-74, and 87-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese patent document 61-91662 in view of Jewell et al. (U. S. Patent No. 4,947,413) and in further view of Suzuki et al. (U. S. Patent No. 4,871,257) or Minami et al. (U. S. Patent No. 4,153,336). The Japanese patent document 61-91662 discloses in figure 5 a reticule 8 which includes a fine pattern. Figure 3 discloses an aperture stop which is interchangeable with aperture stop shown 9 in figure 5. If one drew a line 22 degrees from the horizontal, the stop would block the light along plane of incidence along the plane 22 degrees from the horizontal. Drawing a second line 22 degrees from the vertical would be orthogonal to

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the first line. The light from the other apertures would be a pair of paths which are symmetrical with each other with respect to the plane of incidence. The aperture stop 9 in figure 5 is “exchangeable” with other apertures stops in figures 1-4. Other optical elements in figure 5 or figure 6 in the Japanese patent document 61-91662 would be movable. Thus, the Japanese patent document 61-91662 discloses the invention except for the fine pattern having linear features. Jewell et al. discloses that it is well known in the art to provide the reticule or mask 18 (figure 2) with a fine pattern with linear features extending in orthogonal directions (see pattern D). Other optical elements in Jewell et al. would be movable. Suzuki et al. '257 illustrates in figures 2, 5 and 13, using an aperture plate P_c having apertures at 45 degrees from the horizontal. In particular, figure 13 discloses apertures in four quadrant. Thus, the aperture plate would block light along the X and Y axis. In addition, Suzuki et al.'257 discloses in column 6, lines 5 and 35, column 7, line 68 and column 8, line 1, the use of orthogonal lines in the circuit pattern and correlates the apertures in the aperture plate with these orthogonal lines. **Figure 18 in Suzuki et al. '257 also discloses moving or exchanging stops.** Other optical elements in Suzuki et al.'257 would be movable. Minami et al. (U. S. Patent No. 4,153,336) discloses spatial filter 16 in figures 1 and 3A, 3B, 3C, and 3D used to block light in the horizontal and vertical directions. Column 2, lines 66 and 67, disclose that the subject pattern 7 (photomask) can be composed of longitudinal and transverse straight lines (i.e. have linear components along first and second orthogonal directions). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the Japanese patent document 61-91662 with orthogonal linear features in view of Jewell et al. for the purpose of making the device in the Japanese patent document 61-91662 more useful to different circuit patterns. It would have been

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obvious at the time the invention was made to a person having ordinary skill in the art to provide the aperture stop or aperture plate in the modified device of the Japanese patent document 61-91662 and Jewell et al. with these linear features correlated with orthogonal light blocking means in view Suzuki et al.'257 or Minami et al. for the purpose of making a better final product.

Conclusion

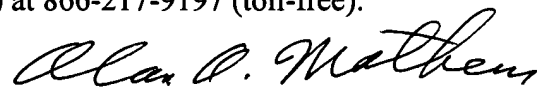
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent to Sheets is cited to show aperture plates A,, A₄, A₅, in figures 8-11.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan A. Mathews
Primary Examiner
Art Unit 2851

AM